

Lower Duwamish Waterway Group

Port of Seattle | City of Seattle | King County | The Boeing Company

MEMORANDUM

To:
From: LDWG
Subject: Minutes from December 19th, 2001 Meeting
Date: January 11, 2002

Below are notes from the December 19, 2001 meeting at EPA with Bruce Duncan (EPA), Erika Hoffman (EPA), Brad Helland (Ecology), Pete Adolphson (Ecology), Ted Turk (SAIC), Tim Hammermeister (SAIC), Gary Pascoe (contracted through Striplin Environmental), Rick Bodishbaugh (Exponent), and Kathy Godtfredsen (Windward). These notes are organized per the agenda item regarding the problem formulation for the Lower Duwamish Waterway Scoping-Phase Ecological Risk Assessment. These notes reflect agreements reached among the meeting participants, and do not necessarily constitute project decisions.

MEETING GOALS AND PROCESS SUGGESTIONS


All attendees agreed that more frequent, interactive communication among technical representatives of stakeholders would expedite the process and work to minimize misunderstandings. In addition, meeting notes, such as these, would be useful to document agreements. Regarding future deliverables, the following format was suggested: 1) Presentation of the deliverable at the time of its submittal; 2) Agency comment period; 3) Meeting to discuss agency comments; 4) Submittal of written agency comments.

COMMENTS ON CONCEPTUAL SITE MODEL (CSM) MEMORANDUM

Sediment ingestion

Chinook: This pathway is believed to be insignificant based on lack of sediments in available stomach content data.

Bull Trout: This pathway is more uncertain, but is likely to be incomplete. No stomach content data are available to verify.

Prepared by  Windward
environmental

KCSlip4 61310

SEA429695

English sole: This pathway is likely to be complete, but quantification is difficult so will be called complete but of unknown significance. This issue is only relevant for metals uptake because other contaminants are assessed using a whole body approach. For metals, a back-of-the-envelope calculation would be useful to assess whether this pathway could potentially influence the COC screen. In deliverables, results from back-of-the-envelope calculations will not be presented, but a statement will be added to acknowledge that an issue was investigated and found to be insignificant.

Direct Water Contact

Chinook BAF Calculation: Calculations in comments were based on acute (1 hour) concentrations, and all agreed that chronic concentrations (4 day average) would be more applicable and also result in concentrations more similar to those observed.

Fish Ingestion

Chinook: This pathway is likely to be complete but insignificant. Small fish have not been observed in stomach contents of juvenile chinook, and even if they were, concentrations in these prey are unlikely to be higher than those in other salmonid prey. Additional discussion will be added to the CSM in the problem formulation.

Benthic Invertebrates: Pathway is considered to be complete and significant for crabs. Although crabs may consume dead fish, the assessment of crabs using crab tissue would integrate this pathway.

Benthic Ingestion

Great Blue Heron: This pathway is likely to be complete but not significant based on information presented in the EPA Exposure Factors Handbook.

Other Ingestion

Avian: The key question is whether a mussel-eating bird (such as Barrow's Goldeneye) would be protected through the assessment of a fish-eating bird (i.e., are concentrations in mussels lower than those in fish). Further discussion will be provided in the problem formulation.

Mussels as prey: Mussel data will be added to problem formulation, although it is agreed that the percentage of contaminants in mussel tissue from sediment sources is unknown. Additional mussel sampling is not requested. The Salazar et al. study generally shows low BSAFs (note, however, that it was not designed for this purpose).

Chinook: Figure will be modified to show other ingestion is related to water column or terrestrial prey species. For chinook, other ingestion refers to terrestrial insects.

Spotted Sandpiper: If a local source of information is available, it will be reviewed and incorporated. No changes are required.

River Otter: Prey species are based on King County Water Quality Assessment. No changes are required.

Harbor Seal: Mussels are not a good representative for prey items such as octopus or squid (different exposure pathways). Exposure through the "other ingestion" pathway is likely to be complete but insignificant in LDW, although some uncertainty will be acknowledged.

Direct Sediment Contact

English sole: This pathway will be complete but significance unknown. No data are available to assess exposure through this pathway, but whole body concentrations would integrate it (for all COPCs but metals).

Spotted sandpiper and seals: There are no standard methods for quantifying this pathway and no precedence for compensating for this uncertainty. It is considered complete but insignificant.

COMMENTS ON RESPONSE TO RESPONSE TO COMMENTS ON THE PROBLEM FORMULATION

Benthic Approach

Additional information will be added to the problem formulation acknowledging different feeding strategies and life histories among benthic invertebrate species. Bioaccumulation of COPCs by benthic invertebrates will be acknowledged and discussed under wildlife and fish sections (for trophic transfer). The approach regarding effects on benthic invertebrates from bioaccumulation was left unresolved, but it was agreed that it would not impact the problem formulation.

Crabs as ROCs

Potential risks to crabs will be evaluated in the effects and exposure assessment, and uncertainties will be acknowledged. EPA will provide additional effects data from the URS database (note that these data have now been provided).

Mussels

Mussels will not be viewed as an ROC, but tissue data for mussels will be presented. No mussel sampling is proposed or recommended.

TBT

TBT will be assessed for the potential to cause adverse effects to benthic invertebrates using a tissue residue approach.

BAFs

Due to the paucity of literature and site-specific synoptic sediment and benthic invertebrate tissue data, as well as the variability in BAFs, uncertainties in these numbers will be acknowledged, particularly for metals with a NOEC similar to a predicted dietary concentration for fish.

Porewater

This pathway will be discussed in the uncertainty assessment.